

This collection confirms the presence of this species near the edge of its reported range northwards in eastern United States.

It may be noted in passing that previous reports of *Ptilidium ciliare* (L.) Nees for the state, duplicates of which were obtained on loan from the New York Botanical Garden (for which appreciation is here expressed), and examined by the second author, all proved to be *P. pulcherrimum* (Web.) Hampe, a species of scant occurrence in the state. Thus the reported bryophytes for Virginia now stand at 512 with the hepatics at 147.

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MONOTROPSIS LEHMANIAE NOT A REAL SPECIES

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BURNHAM (1906) described *Monotropis Lehmaniae* as a new species, separated from *M. odorata* Ell. by having the corolla "but half the length of the sepals, and the lobes . . . more deeply divided." Moreover, the flowers of the new plant were scentless and "never appear until about the 20th of September." Burnham's initial impression was that only in the time of flowering did the specimens sent to him by Miss E. A. Lehman from the

region of Elkin, North Carolina, differ from typical *M. odorata* (letter of September 24, 1906, to Miss Lehman, of which a copy is in the Wiegand Herbarium of Cornell University). Almost certainly he based his new species on immature plants of *M. odorata*, and the characters he used to separate the plants change with the ontogeny of the individual and hence are not reliable for taxonomic purposes.

Wolf (1922), after many years of observation of *M. odorata* in Alabama, concluded from misstatements in the literature that the plant was new to science and accordingly described it as *Cryptophila pudica*. Though both Small (1933) and Spawn (1938–1939 ?) correctly cited *Cryptophila pudica* as a synonym under *M. odorata*, neither of these authors seemed to appreciate the value of Wolf's data: his records, in my opinion, clearly demonstrate that *M. Lehmaniae* is not a true species. Wolf stated: "The season of the plant extends from the fall of the one to the summer of the next year, and is autumnno-hyemal with reference to appearance of scapes and their full development, vernal with respect to anthesis, aestival as to ripening of fruit. The earliest date recorded of scapes observed above ground is September 12th . . . The scapes grow slowly to about normal size while the flower buds become fairly developed—sepals more or less to full size, corolla to about two-thirds of the full length. The winter is then passed by the plant in apparent dormancy till March or the approach of April." He observed that a cover of leaf mold was necessary for protection of the plant during the winter.

Monotropsis odorata is a fairly common plant in the environs of Williamsburg, James City County, Virginia (Erlanson, 1924; Artz, 1934; Fernald, 1943). I have known the plant here since 1939 and have come to expect it to appear through the covering of leaves during the latter half of February and to attain full development some weeks later. During the past season I have discovered that by raking away the leaf mold one can find the plant from fall through to the time it normally appears. Plants exposed during the winter were killed.

I have recently examined the following specimens from the Williamsburg stations:

Grimes 3269 NY, Feb. 28, 1921; *3282* GH, March, 1921. *Fernald, Long & Abbe 14209* US, GH, April 19, 1942. *Baldwin 12* GH, Feb. 19, 1939; *12571* US,

Feb. 18, 1949; 15048 NY, K, GH, Feb. 26, 1956; 15086 GH, Nov. 21, 1956; 15087 GH, Dec. 27, 1956; 15088 GH, Dec. 31, 1956; 15089 GH, April 6, 1957.

Baldwin 15088, collected December 31, 1956, has the calyx exceeding the corolla, and the corolla lobes about equal the corolla tube. *Baldwin 15089*, collected on April 6, 1957, from the same colony, has the corolla exceeding the calyx and the corolla lobes half the length of the tube. In other words, in the time interval of more than three months these relative lengths have changed significantly. These are not, therefore, reliable taxonomic characters in *Monotropis*, but they are used in all the keys that attempt to differentiate among the three species that have been described: *M. odorata*, *M. Lehmaniae*, and *M. Reynoldsiae* (A. Gray) Heller.

As the name connotes, *M. odorata* has odoriferous flowers. Copeland (1939) claimed that various writers, beginning with Stephen Elliott who described the species, have mentioned that the flowers smelled like violets. Plitt (1909) wrote that as he knew the plant in Maryland it had a "delightful fragrance, clover-like . . . perfuming the air for some distance around." A. V. Smith (conversation) said that he had on occasion in Maryland found the plant by first detecting the aroma. Wolf (1922) considered that his Alabama plant had an odor of cloves. A notation on *A. M. Huger 17 NY*—a specimen of *M. odorata* collected near Hendersonville, North Carolina, in 1898, reads: "Is *always* deliciously fragrant—a very *rich & spicy* odor." This last description coincides with my concept of the plant at Williamsburg except that specimens collected in November and December of 1956 (cited above) had no discernible odor.

Baldwin 15086 consists of several plants discovered under a rotten log which W. Leslie Burger turned over in search of herpetological specimens; though these plants were kept in a warm laboratory for a number of days, they developed no odor. *Baldwin 15087* consists of plants from the same colony as 15086 and were odorless; they were found by raking away the leaf-mold cover. *Grimes 3282* was found at the same station in March, 1921: "Shore of Tutters Neck Pond, S. E. Williamsburg"; M. L. Fernald (letter of June 27, 1949, to me) identified *Grimes 3282* as *M. odorata*. The specimens constituting *Baldwin 15088* were found just west of Williamsburg by raking away leaves and debris; they came from the same colony that supplied specimens

for *Baldwin 12571, 15048, and 15089*. The last three numbers had the odor that characterizes the species; no odor could be detected for *15088*. The conclusion seems inescapable that *M. odorata* does not have its fragrance until anthesis, *i.e.*, in late winter and spring. Miss Lehman, collecting the immature plants upon which Burnham founded his species, correctly noted that they were scentless.

Neither morphological characters of flowers, nor time of flowering, nor absence of odor are legitimate bases for maintaining *M. Lehmaniae* as a good species.

Spawn's (1938-1939 ?) distribution map for the representatives of *Monotropis*, already weak at the time of publication because of inadequate attention to collections and careful records, needs further revision if my reduction of *M. Lehmaniae* is accepted.

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ECHINOCHLOA WALTERI IN CONCORD, MASSACHUSETTS.—Attention previously has been called to the probable effect of sewage pollution of the Sudbury-Concord River system in eastern Massachusetts on certain elements of its aquatic and riparian vegetation assumed to be due to a change from a natural slightly acid to a neutral or even basic environment supplied by the decomposition of sewage wastes. (Eaton, 1947).